



**The Impact of Social and Human Capital on the
Acceleration of Venture Capital Financing: Evidence
from the Algerian Startup Ecosystem**

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Abstract:

Numerous studies have explored the influence of human and social capital on the growth, success of start-ups. However, relatively few investigations have specifically focused on how these forms of capital affect the ability of start-ups to mobilize funding, particularly venture capital. Based on an empirical study conducted on a sample of 120 Algerian start-ups, our findings reveal a positive impact of both human and social capital on the ability of start-ups to secure venture capital funding in a timely manner. Nevertheless, this influence appears to differ according to the stage of financing. More specifically, social capital plays a pivotal role during the initial stages of the fundraising process by facilitating access to networks and early contact with investors. In contrast, human capital emerges as a decisive factor in the later stages of venture capital financing, by enhancing the credibility of the founding team and reinforcing investor confidence.

Keywords : venture capital; human capital; social capital; startups.

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1. INTRODUCTION

The creation of a start-up requires the founder to possess the ability to assemble a team with diverse skill sets, to access a variety of financial and social resources, and to effectively implement a business plan in the role of manager. This entrepreneurial process demands mastery of a broad range of competencies and calls for a highly versatile profile. While some entrepreneurs may initially possess generalist skills, these can be strengthened through investments in human capital—particularly via academic training—as well as in social capital. As a result, experienced founders tend to develop more comprehensive profiles, especially in terms of relational competencies. This translates into stronger entrepreneurial performance and a greater ability to mobilize external financing.

In this regard, for start-up founders—and even more so for those facing financial constraints—venture capital represents a critical source of funding to ensure the sustainability and growth of the enterprise. However, for this to be viable, start-ups must be capable of raising such funds efficiently and within timeframes aligned with their growth trajectories.

On another front, numerous studies have attempted to explain how the human and social capital attributes of start-up founders contribute to their firms' growth and financial success. For instance, (Hulsink and Elfring, 2003, p 1) propose examining how an entrepreneur's network contributes to start-up success. The network is considered a strategic lever, as it plays a role in three fundamental entrepreneurial processes: the ability to identify opportunities, to gain the legitimacy and to access resources, required for long-term sustainability. Similarly, (Florin, Lubatkin, and Schulze, 2003, p374) demonstrate how human and social capital influence a firm's capacity to raise financial capital during growth phases—particularly pre-IPO—as well as its performance in the two years following the IPO. Consistent with theoretical predictions, data from a sample of 275 publicly listed companies show that human and social capital enhance

organizational productivity and constitute a sustainable source of competitive advantage.

While human and social capital have been widely acknowledged in the literature as key drivers of start-up development and growth (Jenssen & Koenig, 2002, p1039), relatively few studies have focused on how these forms of capital affect a start-up's capacity to attract financing, especially its ability to quickly secure venture capital, which is the aim of our study

Before diving deeper, it's important to understand why the timing of financial resource acquisition matters especially for early-stage ventures, where time is a critical asset. In established organizations with sufficient resources, scaling up operations can often be achieved simply by hiring more people. But in young resource-constrained startups, it's typically the founder or CEO, often the same person, who must juggle a wide range of responsibilities. These include not only fundraising but also operations, human resources, customer and supplier relationships, and more. Before a formal organizational structure is in place, the founder must frequently multitask across these diverse roles. This creates a zero-sum dynamic: time spent on one activity, like raising capital, often comes at the expense of another, such as product development. While some tasks may offer indirect benefits (for example, networking and brand visibility during fundraising), it is generally more efficient to reduce administrative burden on the executive team, particularly in fast-paced, competitive markets where firms race to launch products. Securing funding early, therefore, allows startup teams to shift their focus toward product development, competitive analysis, strategic sales and marketing efforts.

Few research studies have examined the temporal dimension as a strategic resource mobilized by startups in the context of their access to venture capital financing. To the best of our knowledge, the study conducted by (Junfu Zhang, 2011, p187) constitutes the only known contribution that explores the ability of early-stage ventures to raise funds rapidly, in relation to their attributes, particularly their prior experience in business. However, this study presents two main limitations that warrant discussion. The first limitation concerns the

way the “time” variable—treated as a dependent variable—is operationalized. Zhang measures time as the duration between the startup’s founding date and the date of the fundraising event. However, this metric does not accurately reflect the period actually devoted to seeking funding. A more appropriate approach would be to consider the interval between the moment the startup actively initiates its search for capital and the point at which the funds are effectively raised. Indeed, the initial months following a startup’s legal establishment are often dedicated to administrative and organizational tasks (e.g., registration with public authorities, opening a bank account, hiring initial personnel, etc.) which, although essential, are not directly related to the fundraising process. Consequently, using the date of incorporation as the starting point may introduce bias in measuring the time allocated specifically to capital raising. The second limitation lies in the conceptualization of the fundraising process as a homogeneous and indivisible period. In practice, however, venture capital financing typically unfolds across multiple sequential and interdependent stages: submitting the funding application, investor due diligence, negotiation and signing of the terms sheet, and finally, the closing of the deal. Therefore, two startups that exhibit identical total fundraising durations from initiation to closure may still differ significantly in the internal dynamics and progression through each phase. Aggregating this period into a monolithic time block fails to capture the complexity and variability inherent in different financing trajectories.

As a result, and in line with the analytical framework adopted in this study, we have disaggregated the temporal variable into multiple sub-variables, in order to more accurately reflect the complexity of the fundraising process. Accordingly, we define the starting point for measuring fundraising duration not as the date of the startup’s founding, but rather as the effective date on which the funding request is initiated. Furthermore, the social and human capital of the founders—specifically, their networks and professional backgrounds—are incorporated into our model as explanatory variables likely to influence the temporal dynamics of the fundraising process.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and develops the testable hypotheses. Section 3 describes the data and reports the descriptive statistics. Section 4 presents the empirical results, while Section 5 concludes by discussing the study's main contributions, its limitations, and directions for future research.

2. Prior literature and hypothesis development

This section surveys the literature on human and social capital and time to venture funding, and builds on these studies to generate predictions about differences for individuals with varied human and social capital

2.1. Human Capital and startups

Traditionally, assets that generate future income are referred to as capital, the economic analyses of investment and capital focused on physical capital, such as machinery, equipment, or buildings, which would produce income in the future by enhancing productive capacity. However, several classical economists, particularly Adam Smith, noted that education could similarly boost the productive capacity of workers, just as the purchase of new machinery or other forms of physical capital increased the productive capacity of factories or businesses. This led to an analogy between investment in physical capital and investment in human capital.

The concept of human capital refers to the fact that human beings invest in themselves, by the means of education, training, or other activities. The explanations of the concept of human capital suggest that education or training raised the productivity of workers (Woodhall, M. 1987, p14)

Hence, In his book titled Human capital revisited, (Becker G. S 1994, p17) . Explore human capital along two main dimensions: Education and Training.

Furthermore, human capital refers to the productive capacities of human beings as income producing agents in the economy. Human capital is the stock of skills and productive knowledge embodied in people.

Investment in human capital may lead to knowledge, this last, can be categorized into two types: tacit and explicit (Polanyi, M 2009,

p6). Tacit knowledge refers to the practical, often unspoken understanding gained through experience, typically not captured in formal language. In contrast, explicit knowledge involves information that is clearly defined and communicated, such as that found in written procedures, formal documents, and academic institutions. Addressing complex problems and making entrepreneurial decisions requires a combination of both tacit and explicit knowledge.

A growing number of studies incorporate human capital into their predictive models of entrepreneurial success. Within this framework, researchers have employed a broad spectrum of variables as proxies for human capital, including formal education, specialized training, professional and industry experience, prior start-up involvement, managerial or ownership experience, parental background, as well as diverse forms of skills and knowledge. (Davidsson, P., & Honig, B. 2003, p301), (Reuber, A. R., & Fischer, E. M 1994, p365) (Bates, T. 1990, p551), (Colombo, M. G, Delmastro, M., & Grilli, L. 2004, p1183) .

Once individuals engage in entrepreneurial activity, those with higher levels of investment in human capital are more likely to pursue greater business growth and profitability than their counterparts with lower levels of human capital investment. (Unger, J. M 2011,p341) (Cassar, G 2006, p610), (Florin, J., Lubatkin, M., & Schulze, W. 2003), (Cooper, A. C., Woo, C. Y., & Dunkelberg, W. C. 2003, p374), (Dyke, L. S., Fischer, E. M., & Reuber, A. R. 1992, p72), (Duchesneau, D. A., & Gartner, W. B. 1990, p297) and (Ridwan, M., Ratnamiasih, I., & Septiawan, B. 2022, p70)

Once again, human capital is at the heart of the innovation processes and capabilities within organizations. According to his study, (Subramaniam, M., & Youndt, M. A. 2005, p450), identified a positive link between human capital and the innovative capacity of organizations through a sample of 93 organizations.

On another note, human capital has long been recognized as essential for a venture's survival and growth. Strong human capital can reduce uncertainty for external stakeholders, such as venture capitalists. In the early stages of a venture (Florin, J., Lubatkin, M., & Schulze, W. 2003, p374).

The startup domain has not escaped this analogy, in fact, (Kaiser, U. & Müller, B 2015, p787) have examined the characteristics and professional skills of entrepreneurs as key factors in the success of startups. In this context, they investigated how the diversity of skills within new startups affects their chances of success and how this diversity evolves over time. A similar study was conducted by (Hashai, N., & Zahra, S. 2022, p155) , where they examined the effects of the founding teams' prior work experience in both the firm and the industry on startup growth within the context of high-tech industries.

Unlike bankers, whose funding decisions are primarily driven by financial considerations and who give limited attention to entrepreneurial capabilities, the most consistent finding in studies of venture capitalist fund manager's decision-making criteria is the significant emphasis placed on the human capital quality of startups. This includes factors such as management skills, the quality of management, the characteristics of the management team, and the team's track record (Mason, C., & Stark, M. 2004, p227). Furthermore venture capitalist decision to invest shows that while VCs themselves typically believe that management capabilities matter more than any other factor (Khanin, D., Baum, J. R., Mahto, R. V., & Heller, C. 2008, p187).

In his survey (MacMillan, I. C., Siegel, R., & Narasimha, P. S. 1985, p119) a questionnaire was distributed to one hundred venture capitalists to identify the key criteria they use when deciding to fund new ventures. One of the most significant findings from the study is the direct confirmation of the widely held view within the venture capital community that, above all, the quality of the entrepreneur is the decisive factor in the funding decision. Five of the top ten criteria were related to the entrepreneur's experience or personality.

This observation aligns with the findings of (Tyejee and Bruno 1984, p1051), one of the most frequently cited studies in this field, which identified five fundamental evaluation criteria used by venture capitalists: Notably, Human Capital was identified as one of the five criteria, designating as managerial capabilities. In fact (Zhang, J. 2011, p187) shows that entrepreneurs with prior founding experience as a

measure of strength of their human capital, has quicker access to VC funding than novice entrepreneurs without founding experience. Moreover, this first group of entrepreneurs had ample access to venture capital funding and raised more capital than the second group.

Likewise, (Hsu, D. H. 2007, p722), highlights a finding similar to that of the previous researcher: a marked difference between the two groups (experienced vs novice entrepreneurs) , both in terms of access to funding and in achieving a higher valuation during the venture capital funding process. Additionally, holding a PhD as a signal of the strength's founder human capital, not only facilitates access to funding but also results in more favourable terms in the valuation negotiation. Thus the preceding discussion leads to the following empirical predictions:

Hypothesis 1a: Entrepreneurial teams with higher educational levels will receive venture capital funding more quickly.

Hypothesis 1b: Entrepreneur teams with more founding and managing experience will receive venture capital funding more quickly.

2.2. Social Capital and startups

Social capital theory is based on the idea that networks create value for their members by granting access to the social resources embedded within them (Florin, J., Lubatkin, M., & Schulze, W. 2003, p374). It is a longstanding concept that gained prominence in academic and policy discussions only in the 1990s. In recent years, its significance in explaining economic and social phenomena has become increasingly recognized. Social scientists, including economists, (Jenssen, J. I. 2001, p103); (Hulsink, W., & Elfring, T. 2003, p3); (Florin, J., Lubatkin, M., & Schulze, W. 2003, p375); (Davidsson, P., & Honig, B. 2003, p301); (Hsu, D. H. 2007, p723), have become increasingly interested in social capital and have started using this concept as an explanatory variable to understand economic behaviour and ventures performance.

The concept of social capital revolves around social relationships, with its key components including social networks, civic engagement, norms of reciprocity, and generalized trust, it is defined as “a collective asset in the form of shared norms, values, beliefs,

trust, networks, social relations, and institutions that facilitate cooperation and collective action for mutual benefits” (Bhandari, H., & Yasunobu, K. 2009, p480). The characteristics of social capital, such as its ability to function as an explanatory variable in production functions, its accumulation over time, its potential to enhance startups performance, its role as an investment with anticipated future returns, its convertibility, and the need for ongoing maintenance, qualify it as a form of capital.

Social capital has been defined in various ways by different authors, each reflecting their own perspectives and interests. Some of the most prominent figures in the discussion of social capital include Pierre Bourdieu (1986) and Coleman (1990) , (cited by Bhandari & Yasunobu, 2009, p480), the first defined it as: “The sum of the actual or potential resources that are linked to the possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition”. This definition emphasizes the importance of social networks, specifically the opportunities and advantages that group membership provides to its members.. The richness of social capital depends on the size of the network and the volume of capital possessed within these connections. This capital is maintained and strengthened as long as members continue to invest in their relationships.

According to Coleman (1990), social capital functions as a productive resource that enables the attainment of objectives which would otherwise remain inaccessible. It is embedded within the structure of relationships among actors and operates by facilitating their actions.

Coleman distinguishes three principal forms of social capital: (i) reciprocity and trust, (ii) information channels and the flow of information, and (iii) norms reinforced through sanctions. These resources can be mobilized by both individuals and organizations in pursuit of their goals. For Coleman, social capital is a public good,

(Lin, 2001, p7) defines social capital as “investment in social relations with expected returns in the marketplace.” In practical terms, Lin further elaborates social capital as “resources embedded in social networks that are accessed and utilized by actors to carry out actions”.

The concept encompasses two key elements: (i) resources embedded in social relations. (ii) access and utilization by Actors.

The variety of definitions of social capital is not due to a lack of understanding of what it is, but rather because of the different dimensions of social capital. There remains significant debate within the academic community about what exactly constitutes social capital and what its key components are that make it applicable to all situations. Given its complex nature, it is not surprising to encounter many definitions, and it is unreasonable to expect a universal measure.

Therefore, it is beneficial for a startup to establish numerous connections with high-status external partners, who bring a wide range of experience and credibility. While the human capital explanation focuses on the qualifications of a venture's management team, the social capital explanation emphasizes the value of the team's social connections and networks. Social capital plays a pivotal role in the emergence and growth of startups, offering benefits in various ways and at different stages of a startup's development. For this reason, the ideal entrepreneurial network should feature a balanced combination of strong and weak ties. (Hulsink, W., & Elfring, T. 2003, p6) have identified three entrepreneurial processes where network connections are particularly significant: (i) The ability to discover opportunities, (ii) The ability to secure resources, (iii) The ability to gain legitimacy:.

A wide range of empirical studies has demonstrated the positive relationship between social capital and company performance in general, and that of startups in particular. For instance, we may cite the study conducted by (Stuart, T. E., Hoang, H., & Hybels, R. C. 1999, p315), which examined how the social networks of young companies influence their ability to acquire the resources necessary for survival and growth. The same observation was highlighted by (Florin, J., Lubatkin, M., & Schulze, W. 2003, p374), who used social capital theory to explain how social capital influences a venture's ability to accumulate financial capital during its growth stages: prior to an initial public offering, and its performance in the two years following its IPO.. In a similar way, (Jenssen, J. I. 2001, p103), demonstrates that the relationship between social networks, entrepreneurial resources, and their impact on entrepreneurship is

crucial. Thus the preceding discussion leads to the following empirical predictions:

Hypothesis: Startup's social capital will be positively associated with successful leveraging venture capital funding in terms of speed.

3. Method

3.1. Sample and Data source

To test the hypothesis, we obtained contact information for nascent companies that had received the startup label issued by the Algerian Ministry of Knowledge Economy, Start-ups, and Microenterprises. This Ministry regularly reviews and assesses the applications of emerging ventures seeking the startup label. The label is granted based on several key criteria that distinguish startups from any other established companies, including (i) the scalability of the project, (ii) the innovativeness of the business model, and (iii) the quality of the management team.

Obtaining the startup label allows businesses to benefit from certain tax advantages and, more importantly, potential project financing from a public venture capital fund: Algerian Startup Fund (ASF). The Ministry, which was established in 2020, works closely with various stakeholders in the startup ecosystem, including banks, associations, and public institutions, to enhance the investment framework and support the growth of startup activities.

The public fund, known as the Algerian Startup Fund (ASF), is managed by the five largest public banks in Algiers and functions under the Ministry. It began receiving funding applications from labeled startups shortly after its creation in late 2021. The labeling process itself, as a first step, has allowed for the formalization and quantification of startup activities in Algeria, making the Ministry's startup contacts database a reliable and nearly exhaustive source of information for our study.

A telephone survey was conducted for our research, we focused on the first batch of labeled companies from 2022, which gave us a sample of 171 labeled startups. This formed the basis of our initial sample. We administered a questionnaire to these startups. Of these, 31 had not applied for funding from the ASF, 20 showed no interest in participating in our study or had not secured funding from the ASF. This reduced our final sample to 120 labeled and funded startups, which participated in our study. The remainder of this section contains a description of the variables used in the empirical analysis.

3.2. Dependent variable

The activities of venture capitalists can be understood as a structured, step-by-step process consisting of five key stages (Tyebjee, T. T., & Bruno, A. V. 1984, p1051): (1) Deal Origination: This is the stage where potential investment opportunities first come to the attention of the venture capitalist. (2) Deal Screening: At this stage, venture capitalists filter through the deals based on a set of predefined criteria or policy variables. The goal is to narrow down the pool of opportunities to a manageable few, focusing on those that merit deeper evaluation. (3) Deal Evaluation: During this phase, the venture capitalist assesses both the perceived risk and the expected return on each potential investment. (4) Deal Structuring: In this phase, the venture capitalist negotiates the terms of the investment, which typically includes determining the price (i.e., the equity stake to be offered to the investor) and the covenants or conditions that will mitigate the investor's risk. (5) Post-Investment Activities: After the investment is made, venture capitalists continue to support the venture by providing assistance in areas such as executive recruitment, strategic planning, securing additional financing for expansion, and helping to navigate major events like mergers, acquisitions, or public offerings.

The aim of our research is to analyze the time invested by startups seeking funding from the ASF, starting from the date they obtain their startup label (which marks their eligibility for ASF funding) until the actual disbursement of the funding. By examining the funding process with the ASF, we identify three critical time intervals or steps that startups must navigate to secure funding. The first interval (stage 1), corresponding to our first dependent variable (model 1), begins from the date the label is obtained and continues until the submission of the funding application to the ASF. The second interval (stage 2), representing our second dependent variable (model 2), spans from the submission of the application to the receipt of a favorable funding decision (the term sheet). Finally, the third interval (stage 3), which represents the third dependent variable in our study (model 3), covers the period from the notification of the favorable funding decision to the actual disbursement of the funding (the closing). The primary objective in selecting the dependent variables is

to understand how the independent variables, notably social and human capital, influence the ability and speed of startups in navigating these critical stages in order to secure the desired funding. Thus, the three models will be analyzed using linear regression.

3.3. Independent variables

Human capital of startup owners was assessed using several indicators. Respondents were asked to report the highest level of education they had completed, which reflects their explicit knowledge. This variable, which ranged from primary education to a doctorate, was coded into the number of years of schooling completed. A dummy variable was also added to indicate whether at least one member of the management team holds a doctoral degree. Significant attention has been given to the specific training needs of startup entrepreneurs. Various classes are typically available, covering topics such as legal matters, procedures, marketing, and strategic aspects of starting a new business. To gauge this, we asked respondents whether they had ever attended any business-related classes or workshops. Given that we had no means of evaluating or comparing the quality or scope of course content, A quantitative variable is created to reflect the number of classes attended by the respondent.

To explore tacit knowledge, we asked respondents about their total years of full-time paid work experience across any field, which we used to create the experience variable. Additionally, we assessed the number of years of supervisory or managerial experience. We also asked respondents about the number of businesses subsequently launched by the entire management team, as referenced in the studies by (Zhang, 2011, p187) and (Hsu, 2007, p722). Prior founding experience is widely regarded as a valuable asset when seeking venture capital financing (Zhang, J. 2011, p187). Accordingly, we consider that a startup founder with prior business founding experience is more likely to raise funds quickly than a novice entrepreneur. In this regard, an exogenous variable is introduced to measure the number of businesses previously launched by one of the founders of the startup seeking funding from ASF.

As noted by (Sabatini, F. 2008, p466) and (Bhandari, H., & Yasunobu, K. 2009, p480) Social capital is a complex and

multidimensional concept, encompassing various dimensions, types, and measurement levels., The existing literature allows us to identify three variables that may represent the social capital dimension of the Algerian startups. Several dummy variables were employed to represent each type. For example, one indicator of bonding strong ties was a dummy variable indicating whether either parent had ever owned a business, as included by (Davidsson, P., & Honig, B. 2003, p301). Additional variables were created for individuals who agreed that their family, relatives, and close friends support were supportive of their entrepreneurial efforts. As previously noted, the family plays a central role in social capital and has been shown to influence the likelihood of startups success (Jenssen, J. I. 2001, p103). Another question addressed factors typically associated with bridging weak ties, particularly those provided by individuals in the business community. The question asked whether respondents had participated in any business networks, such as trade associations, chambers of commerce, or service clubs. Affirmative responses were coded as 1 in a dummy variable (Florin, J., Lubatkin, M., & Schulze, W. 2003, p374).

3.4. Control variables

A number of control variables are used in the empirical analysis:

The age of the startup in months is included as a control variable in the study. It is assumed that older startups benefit from more established internal operations, which allows them to formalize a funding request to the ASF more quickly. Moreover, these startups are better positioned to prepare a clear and concise business plan during the funding review period, given the history of their operations.

The number of founders of the startup provides insight into the management team's ability to work harmoniously, collaborate, and support each other. This suggests that a larger founding team is more likely to accept the presence of a new shareholder and to comply with the binding terms of a shareholder agreement.

The number of clarification requests from the ASF regarding the data and figures in the business plan during the funding review period is another important variable. Indeed, the time required to

process the funding application largely depends on the startup's ability to present a clear, concise, and accurate business plan, enabling the ASF to make a swift decision on the funding request. Since the business plan serves as the reference document for the ASF's decision-making, any ambiguities or requests for clarification delay the processing of the funding request (this applies only to Model 2).

The time spent during both Stage 1 and Stage 2 is included as a control variable exclusively in Model 3. We hypothesize that founders who spent relatively less time during Stages 1 and 2 are likely to perform better in managing their funding applications and, as a result, complete Stage 3 in a shorter amount of time (this applies only to Model 3).

Financial support from a business angel or a bank is represented by a binary variable equal to 1 if the start-up secured a funding agreement from either of these sources prior to receiving ASF-type financing for its current project. These funders often play a crucial role in facilitating introductions to venture capital investors. They can also serve as a form of certification or due diligence for ASF, particularly in the case of well-established angel investors.

A final question was included to assess the startup's commitment and emergence within its ecosystem, focusing on participation in meetings, roundtables, and events organized by the Ministry of Knowledge Economy, Start-ups, and Microenterprises, which plays a central role in driving the startup ecosystem. The associated variable tracks the number of events and meetings attended by the startup's founding team during the study period. We expect startups participating in such events to have prior information about the opening of funding application processing sessions by ASF. This will enable them to be informed about the eligibility criteria as well as the funding process. As a result, they will have an advantage at every stage compared to startups that do not have access to this information.

4. Empirical results

In the data quality analysis, outliers were examined and the variables were tested for multicollinearity. No issues were found that posed significant problems. The regression results for Models 1, 2, and 3 are presented in Tables 1, 2, and 3, respectively

Table 1. The linear regression results related to Stage 1.

Variables	Coefficient	Std. Error	T-Statisti	Prob
Constant	80.64943	20.24814	3.983054	0.0001
Age of the startup	-0.481927	0.043301	-11.12965	0.0000
Number of founders	-2.178467	0.269307	-8.089166	0.0000
Financial support	-5.177786	1.070869	4.835124	0.0000
Events	-3.513222	0.430367	-8.163324	0.0000
Education	0.433599	1.070875	0.404902	0.6864
PhD degree	1.337129	2.827886	0.472837	0.6373
Subsequent businesses	-5.954483	0.637872	-9.334914	0.0000
Training	-2.224554	0.659382	-3.373697	0.0010
Work experience	-0.411473	0.259469	-1.585827	0.1158
Managerial experience	-1.699298	0.359899	-4.721600	0.0000
Business community	-3.800615	1.983203	-1.916402	0.0580
Family support	4.202815	2.384783	-1.762346	0.0809
Parent owned business	-0.566173	2.321702	-0.243861	0.8078
R-squared =	0.947902	F-statistic =	148.3558	
Adjusted R-squared =	0.941513	Prob F-stat =	0.000000	

Source: Completed by the Author using the EVIEWS software.

Table 2. The linear regression results related to Stage 2.

Variables	Coefficient	Std. Error	T-Statistic	Prob
Constant	66.933730	7.460300	8.971989	0.000000
Age of the startup	-0.192178	0.016171	-11.883810	0.000000
Number of founders	-1.967675	0.095644	-20.572920	0.000000
Financial support	-4.534725	0.381317	-11.892260	0.000000
Events	-0.004662	0.139113	-0.033511	0.973300
Number clarification	2.887255	0.140783	20.508510	0.000000
Education	0.982143	0.391765	2.506972	0.013700
PhD degree	2.302547	1.051281	2.190229	0.030700
Subsequent businesses	-4.582558	0.228570	-20.048820	0.000000
Training	-1.973874	0.229498	-8.600840	0.000000
Work experience	-0.923208	0.092877	-9.940103	0.000000
Managerial experience	-2.002755	0.133103	-15.046650	0.000000
Business community	-2.404043	0.704300	-3.413378	0.000900

Family support	-3.364205	0.868119	-3.875279	0.000200
Parent owned business	-0.263804	0.860208	-0.306675	0.759700
R-squared =	0.988719	F-statistic =	657.335700	
Adjusted R-squared =	0.987215	Prob F-stat =	0.000000	
Completed by the Author using the EVIEWS software.				

Table 3. The linear regression results related to Stage 3.

Variables	Coefficient	Std. Error	T-Statistic	Prob
Constant	97.317880	8.317958	11.699730	0.000000
Stage 1 and Stage 2	0.115235	0.018638	6.182679	0.000000
Age of the startup	0.221873	0.022900	9.688776	0.000000
Number of founders	2.084850	0.121030	17.225880	0.000000
Financial support	-3.458447	0.459211	-7.531276	0.000000
Events	-0.168334	0.148413	-1.134226	0.259300
Education	-0.845353	0.426792	-1.980715	0.050200
PhD degree	-2.105277	1.138539	-1.849103	0.067300
Subsequent businesses	-5.149057	0.312155	-16.495180	0.000000
Training	-2.298102	0.259188	-8.866535	0.000000
Work experience	-0.856996	0.100816	-8.500568	0.000000
Managerial experience	-2.006973	0.166728	-12.037410	0.000000
Business community	-0.230717	0.798424	-0.288966	0.773200
Family support	-2.161430	0.938897	-2.302095	0.023300
Parent owned business	-2.922086	0.934144	-3.128091	0.002300
R-squared =	0.947902	F-statistic =	674.994600	
Adjusted R-squared =	0.941513	Prob F-stat =	0.000000	

Completed by the Author using the EVIEWS software.

4.1. Stage one

This study employs a multiple linear regression model to evaluate the influence of human and social capital on start-ups' ability to raise funds quickly. The dependent variable, Stage1, captures the number of days between the official labeling of the start-up and the submission of a funding request to the ASF venture capital fund. The model demonstrates a strong explanatory power, with an R^2 of 0.9479 and an adjusted R^2 of 0.9451, indicating that approximately 95% of the variance in fundraising delays is explained by the included variables. The overall significance of the model is supported by a

highly significant F-statistic ($F = 148.36$, $p < 0.0000$).

All control variables are statistically significant and positively associated with a shorter fundraising period. Specifically, the age of the start-up ($\beta = -0.4819$, $p < 0.0000$) suggests that older start-ups tend to initiate funding requests more quickly, likely due to better internal organization and role clarity. Similarly, the number of founders ($\beta = -2.1785$, $p < 0.0000$) shows a negative and significant effect, which may reflect collaborative efforts among co-founders in pursuing funding opportunities. Initial financial support ($\beta = -5.1778$, $p < 0.0000$) and participation in entrepreneurial events ($\beta = -3.5132$, $p < 0.0000$) are also significantly associated with shorter fundraising delays. These findings indicate that start-ups leverage their social networks to access critical information and advice, helping them to identify funding sources more efficiently and accelerate early-stage growth.

Several dimensions of human capital also exert a statistically significant and favorable influence by reducing fundraising delays. Entrepreneurial training ($\beta = -2.2246$, $p < 0.0000$), managerial experience ($\beta = -1.6993$, $p < 0.0000$), and prior involvement in the creation of other businesses ($\beta = -5.9545$, $p < 0.0000$) are all associated with faster access to funding. These results highlight the importance of experiential and professional learning during the early stages of start-up development, providing strong empirical support for Hypothesis 1b.

In contrast, other aspects of human capital appear to have no significant effect. Neither the general level of education ($\beta = 0.4359$, $p = 0.6640$) nor possession of a doctoral degree ($\beta = 1.3371$, $p = 0.6373$) significantly affect the speed of fundraising. This suggests that formal academic qualifications, although valuable in other contexts, are not critical determinants at this particular stage of entrepreneurial financing.

Regarding social capital, affiliation with a business community ($\beta = -3.8006$, $p = 0.0602$) has a marginally significant effect, indicating a tendency for entrepreneurs embedded in professional networks to raise funds more quickly. Family support ($\beta = -4.2028$, $p = 0.0809$) also shows a potentially favorable influence at the 10% significance level. These findings provide partial empirical support for Hypothesis 2.

4.2. Stage two

The objective of the second regression is to identify the determinants of fundraising speed during the second stage of the start-

up financing process, measured by the variable Stage 2. This stage represents the time (in days) between the submission of the funding request and the receipt of a preliminary financing agreement (term sheet) from the ASF venture capital fund. The model demonstrates an exceptionally high explanatory power, with an R^2 of 0.9887 and an adjusted R^2 of 0.9872, indicating that approximately 99% of the variance in fundraising duration is accounted for by the included variables. The overall significance of the model is confirmed by a highly significant F-statistic ($F = 657.34$; $p < 0.0000$).

The control variables remain significant predictors of fundraising speed. The age of the start-up ($\beta = -0.1922$, $p < 0.0000$), the number of founders ($\beta = -1.9677$, $p < 0.0000$), and initial financial support ($\beta = -4.5347$, $p < 0.0000$) all exhibit a favorable influence, consistent with the findings from the Stage 1 model. However, the variable participation in entrepreneurial events becomes statistically insignificant in this model. This suggests that while networking through government-linked events (e.g., with the Ministry of Start-ups) may facilitate initial introductions to funding bodies like ASF, such connections appear to have limited influence during the due diligence and evaluation phase of funding.

In contrast to the other control variables, a newly introduced variable in Model 2, Number of clarifications, shows a positive coefficient ($\beta > 0$), indicating that a higher number of clarification requests from ASF is associated with longer fundraising delays. This highlights the critical role of the initial business plan's clarity and quality. A poorly articulated proposal triggers repeated requests for additional information, substantially slowing down the funding process.

Regarding human capital, several variables exert a significant and favorable effect by reducing the time required to secure funding: Training: $\beta = -1.9739$ ($p < 0.0000$), Work experience: $\beta = -0.9232$ ($p < 0.0000$), Managerial experience: $\beta = -2.0028$ ($p < 0.0000$), Subsequent businesses: $\beta = -4.5826$ ($p < 0.0000$). These results confirm that practical skills and prior entrepreneurial or professional experience allow founders to navigate the funding process more efficiently, resulting in faster validation and decision-making at this second stage. These findings provide further empirical support for Hypothesis 1b.

Interestingly, two human capital variables that were previously non-significant in the Stage 1 model become significant here: Education: $\beta = 0.9821$ ($p = 0.0137$), PhD Degree: $\beta = 2.3025$ ($p = 0.0307$). However, their positive coefficients indicate that higher

academic attainment is paradoxically associated with longer fundraising durations. This may reflect a mismatch between highly specialized academic profiles and the operational or commercial expectations of venture capitalists, particularly during the intermediate evaluation phase of funding applications.

On the social capital side, two variables emerge as significant and exert a favorable effect: Business community membership: $\beta = -2.4044$ ($p = 0.0099$) and Family support: $\beta = -3.3642$ ($p = 0.0002$). These results suggest that start-ups benefiting from family backing or integration within entrepreneurial communities are better positioned to raise funds quickly at this stage, likely due to improved access to information, advice, and insights into investor expectations during the review process. This provides partial support for Hypothesis 2.

Overall, the results from the Stage 2 model reinforce previous conclusions. Experiential human capital—acquired through training, managerial roles, or entrepreneurial ventures—remains a key determinant of fundraising efficiency. In contrast, high levels of formal academic capital may, in some cases, be counterproductive. Social capital, particularly in the form of familial support and professional networks, emerges as a critical lever during this intermediate stage of the financing process.

4.3. Stage three

The third regression model investigates the determinants of fundraising delays during a later stage in the start-up financing process. Specifically, Stage 3 measures the duration between the date of funding approval and the actual disbursement of funds. This model also includes a control variable—Stage 1 plus Stage 2—representing the cumulative duration of the two previous stages.

The model demonstrates a very high explanatory power, with an R^2 of 0.9890 and an adjusted R^2 of 0.9875, indicating that over 98% of the variance in Stage 3 duration is explained by the included variables. The F-statistic ($F = 674.99$; $p < 0.0000$) confirms the overall significance of the model.

The variable Stage 1 plus Stage 2 ($\beta = 0.1152$; $p < 0.0000$) is highly significant and positively associated with Stage 3. This implies a cumulative delay effect: a slow start in earlier funding phases tends to extend into the final phase. In other words, delays at the beginning of the financing journey negatively affect the pace of subsequent stages.

Among the control variables, initial financial support ($\beta = -3.4548$; $p < 0.0000$) continues to exert a favorable effect, consistent

with earlier models. This may indicate that a business plan already validated by another financial institution or venture capitalist is perceived as more credible and compelling by the ASF fund.

Conversely, start-up age ($\beta = 0.2219$; $p < 0.0000$) and number of founders ($\beta = 2.0849$; $p < 0.0000$) show a reversal in their effects compared to earlier stages: both are now positively correlated with delay. This suggests that older start-ups or those with more founders may face organizational or decision-making challenges that slow down the financing process at this stage. A plausible explanation is that, during Stage 3—focused on the legal and financial structuring of the funding deal—conflicts may arise either among founders or between founders and the ASF fund. These disagreements often concern the choice of legal and financial instruments or the valuation of the start-up. Such tensions are more likely to surface in older start-ups with a complex financial history and more heterogeneous founding teams, which becomes more probable as the number of founders increases.

Human capital variables continue to play a decisive role: Subsequent businesses (entrepreneurial experience): $\beta = -5.1491$ ($p < 0.0000$), Training (targeted entrepreneurial education): $\beta = -2.2981$ ($p < 0.0000$), Work experience: $\beta = -0.8569$ ($p < 0.0000$), Managerial experience: $\beta = -2.0068$ ($p < 0.0000$). These results reaffirm that practical skills and accumulated experience help entrepreneurs navigate even the most complex stages of the funding process more effectively, thereby reinforcing Hypothesis 1b.

Interestingly, formal education ($\beta = -0.8454$; $p = 0.0502$) and possession of a PhD degree ($\beta = -2.1053$; $p = 0.0673$) become statistically significant at the 10% level in this model. This suggests a gradual recognition of founders' academic credentials by the ASF fund as the evaluation process progresses. In other words, through continued interaction and assessment, investors may begin to perceive the value of formal educational capital, providing initial empirical support for Hypothesis 1a.

Regarding social capital, the results partially confirm previous trends: Family support: $\beta = -2.1614$ ($p = 0.0195$) remains significant and favorable, indicating that familial backing continues to facilitate funding efficiency even in advanced stages. Parent-owned business: $\beta = -2.9221$ ($p = 0.0023$) becomes significant for the first time, suggesting that a family entrepreneurial background may exert a delayed but critical influence during more complex phases of financing.

In contrast, business community membership ($\beta = -0.2302$; $p = 0.7732$) is no longer significant, implying a reduced influence of professional networks at this advanced stage. This may be due to the increasing importance of founders' individual capabilities over network-driven resources as the funding process becomes more technical and negotiation-intensive. This finding aligns with the declining influence of the event participation variable, which, as observed in both Stage 2 and Stage 3, becomes progressively less relevant as start-ups move further along the fundraising journey.

5. conclusions and discussions

In this article, we have attempted to understand how the human and social capital of certified Algerian startups influences their ability to raise venture capital funding in a timely manner. Drawing upon the literature, we employed a set of human and social factors that are presumed to affect a startup's capacity to mobilize venture capital. Specifically, we focused on education level, professional experience, and social networks. Furthermore, we considered three distinct timeframes that define the sequential process of raising funds from an Algerian venture capital institution: (1) the period between the date of certification and the submission of a funding application; (2) the period between the submission of the application and the receipt of a preliminary funding agreement; and (3) the period between the funding agreement and the actual disbursement of funds.

The findings of our study show that several human and social capital factors positively influence the ability of startups to raise funds rapidly, but their effects vary depending on the stage of the funding process. In the early stages of funding, social capital—particularly through connections to professional networks—proves useful for quickly identifying potential sources of venture capital. In contrast, educational attainment appears to play a minor role at this initial stage. However, this trend reverses in later stages of the funding process. Indeed, venture capitalists tend to place greater value on the educational background of startup founders at more advanced stages, as they associate it with better business management capabilities. Meanwhile, the early advantage conferred by strong ties to venture capital networks tends to diminish as the startup progresses through the funding process.

This article provides empirical evidence supporting our initial hypotheses. What distinguishes this work from most existing studies is that it takes into account the various phases of the venture capital funding process through which startups evolve. As such, it offers

valuable insights for both researchers and practitioners seeking to better understand venture capitalists' investment decision-making processes.

The existing literature suggests that venture capitalists tend to favor startup founders with strong entrepreneurial skills and ties to the venture capital ecosystem. Our findings indicate that while skills and relationships are both important, their relevance varies across different stages of the funding process. At the outset, connections to the venture capital community offer the most advantage; at later stages, strengthened academic and entrepreneurial competencies also become critical.

Among the existing literature on the impact of human and social capital on a firm's ability to raise venture capital, two relatively recent studies are closely aligned with our research. (Hsu, 2007, p722), using survey data from 149 technology startups, investigates how entrepreneurs' human and social capital relate to venture capital funding and firm valuation. He finds that entrepreneurs with prior startup experience are more likely to secure funding through direct links in the venture capital field, and that their startups are more highly valued by investors. Our study similarly shows that experienced founders, well-regarded within professional venture capital networks and by the Ministry of Startups, gain faster access to venture capital—thus confirming and extending Hsu's results.

The second relevant study is by (Junfu Zhang, 2011, p187), who uses a large dataset of 5,972 venture-backed firms across various sectors to examine the benefits of prior entrepreneurial experience. Compared to novice entrepreneurs, those with prior experience in venture-backed startups tend to raise more capital and complete their initial funding rounds more quickly. This underscores the importance of connections with venture capitalists in early funding stages. However, when subsequent funding rounds are also considered, all entrepreneurs with previous startup experience appear to raise more venture capital. Our study similarly suggests that startups embedded in professional networks and connected to the Ministry of Startups are more agile during the early stages of fundraising. Yet, this advantage fades in later stages, where human capital—particularly prior entrepreneurial experience—becomes the dominant factor. These findings are consistent with, and complementary to, those of (Junfu Zhang, 2011, p187).

Although we have drawn on published studies to construct measures of human and social capital and have used multiple

indicators, our measures remain indirect proxies of largely unobservable phenomena and may therefore lack precision. Indeed, empirical studies on social capital suffer from a lack of uniformity in terms of indicators and methodological approaches used to capture its various dimensions (Harper, 2002, p6).

For instance, our measurement of social capital does not account for the number of valuable and relevant resources derived from a given social relationship. In other words, as suggested by (Jenssen, 2001, p103), social capital should be measured by the number of three types of resources obtained from social ties: motivational, financial, or informational. This implies that what truly matters is not merely the existence of a social relationship—as assumed in our study—but rather the quantity and quality of useful resources derived from those relationships. Moreover, it is inherently difficult to account for all types of resources in an empirical study, as some are likely to be hard to quantify. Certain resources, such as legitimacy, may be considered implicit within a social network and are therefore more challenging to capture using standard indicators.

It also seems useful to distinguish between social networks developed prior to the fundraising process and those formed during it. A startup is expected to continuously build its social capital throughout its lifecycle, particularly during the fundraising phase when it is presumed to become more active in expanding its network. However, in our study, we treated social capital as a static variable—unchanged before and during the fundraising process-. This assumption may oversimplify the reality, as (Jenssen, 2001, p103), suggests a distinction between initial social networks and those that emerge during entrepreneurial activities. It is important to note that our findings are preliminary and limited to a single country and a single venture capital fund. Further longitudinal or even cross-national research, focusing on a broader panel of startups, will be required to validate or challenge our results. Another promising avenue for future research would be to investigate whether startups that gain rapid access to venture capital also go on to perform better in terms of financial outcomes i.e., whether speed in obtaining funding is correlated with long-term success.

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